Enquiry into individual route selection for the further development of apportionment models

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The objective of the R&D project was to work out references for a further development of route searching and apportionment models based on individually selected routes found through GSM support and tested through personal interviews. Moreover, we wanted to examine how far other criteria should be taken into consideration in the case of apportionment, apart from travelling time.

The vehicular routes actually driven on by 74 persons on five consecutive working days (Monday to Friday) were fully compiled for this purpose. The mobile phone of the test person was continuously located during a journey for route compilation. Information on the start and end of the journey, means of transport and purpose of the journey were also found out using the mobile phone on the basis of the further developed process TTS (TeleTravel System). The routes actually driven on were then compared to possible alternative routes (determined on the basis of the PTV program system VISUM). Computer assisted personal interviews were conducted with the test participants for the evaluation of the routes (using graphic representations of the routes, amongst other things). The examination was conducted in Berlin and its suburbs.

Effects on the selection of routes due to knowledge of the traffic network were proven in homebound journeys up to a distance of 9 km; routes were selected that indicated a proportion of distance that was 5 to 10 % larger than routes of subordinate road categories compared to journeys that were not homebound. The travelling time was given as the decisive motive for route selection in 64 % of all obligatory journeys, 62 % in occasional journeys and 57 % in journeys carried out for leisure purposes. Apart from the travelling time, on average, a further motive for route selection was given. In routes that were not motivated by travelling time, the distance travelled was the motive in 41 % of the cases.

The results of the examination show a conspicuous significance for “soft” motives for route selection (experience, trying out/coincidence). The definition of these motives as well as the possibilities for their integration into an apportionment model will be consolidated in future.

Evaluations on false estimates of travel time and travelling distance showed that the travelling time was underestimated by the person in 54 % of all journeys and the distance of journey was overestimated in 63 % of all journeys.

The original report includes the following as appendices: the Kartenfenster – CAPI interview (Appendix 1), the brief reference guide “Language assisted questionnaire” (Appendix 2), from for a declaration of consent for locating (Appendix 3), incorrect estimates of the travel time and travelling distance (Appendices 4 and 5) as well as examples on the calculation of of the degree of accordance of routes (Appendix 6). The reproduction of these appendices is rejected in the publication in question. They are available at the Federal Highway Research Institute and can be viewed there. References to these appendices have been maintained in the text of the report for the information of the reader.

Original Reference:

Wermuth, M.; Sommer, C.; Wulff, S.: “Erhebung der individuellen Routenwahl zur Weiterentwicklung von Umlegungsmodellen”, Berichte der Bundesanstalt für Straßenwesen, Bergisch Galdbach 2006. (only in German available).